

Abstract of the Disclosure

A dry-etching method comprises the step of dry-etching a metal thin film as a chromium-containing half-tone phase-shift film, wherein the
5 method is characterized by using, as an etching gas, a mixed gas including
(a) a reactive ion etching gas, which contains an oxygen-containing gas and
a halogen-containing gas, and (b) a reducing gas added to the gas component
(a), in the process for dry-etching the metal thin film. The dry-etching
method permits the production of a half-tone phase-shift photomask by
10 forming patterns to be transferred to a wafer on a photomask blank for a
chromium-containing half-tone phase-shift mask. The photomask can in turn
be used for manufacturing semiconductor circuits. The method permits the
decrease of the dimensional difference due to the coexistence of coarse and
dense patterns in a plane and the production of a high precision pattern-
15 etched product.